



PATENT APPLICATION  
PO-8009  
LeA 36,505

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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

APPLICATION OF

THORSTEN DREIER

SERIAL NUMBER: 10/796,439

FILED: MARCH 9, 2004

TITLE: SOUNDPROOFING AND  
THERMALLY INSULATING  
STRUCTURAL ELEMENT

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) GROUP ART UNIT: 1711  
)  
) EXAMINER: JOHN M. COONEY  
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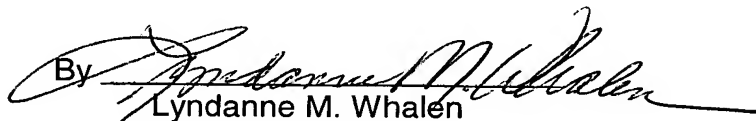
**LETTER**

Mail Stop - Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 2231-1450

Sir:

Enclosed herewith is a copy of an Appeal Brief in the matter of the subject  
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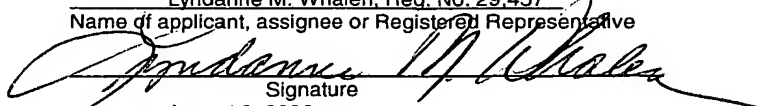
Respectfully submitted

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Lyndanne M. Whalen, Reg. No. 29,457  
Name of applicant, assignee or Registered Representative

  
Signature  
August 2, 2006  
Date



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**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

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| APPLICATION OF            | ) |                          |
| THORSTEN DREIER           | ) | GROUP NO.: 1711          |
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| TITLE: SOUNDPROOFING AND  | ) |                          |
| THERMALLY INSULATING      | ) |                          |
| STRUCTURAL ELEMENT        | ) |                          |

**APPEAL BRIEF UNDER 37 C.F.R. §1.192**

Commissioner for Patents  
P. O. Box 1450  
Alexandria, VA 22313-1450

Sir:

This Brief is an Appeal from the Final Action of the Examiner dated March 3, 2006 in which the rejection of Claims 1-10 was maintained.

**I. REAL PARTY IN INTEREST**

The inventor has assigned his rights to the invention claimed in the present application to Bayer MaterialScience AG, a German corporation. Bayer MaterialScience AG is therefore the real party in interest in this Appeal.

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Lyndanne M. Whalen, Reg. No. 29,457

Name of applicant, assignee or Registered Representative

  
Signature

August 2, 2006  
Date

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## **II. RELATED APPEALS AND INTERFERENCES**

There are no prior or pending appeals, interferences or judicial proceedings which are related to, affected by or have a bearing on the Board's decision in this Appeal.

## **III. STATUS OF THE CLAIMS**

Claims 1-10 remain pending and are the subject of this Appeal.

## **IV. STATUS OF AMENDMENTS AFTER FINAL**

No amendments to the claims have been made or requested subsequent to the Final Action of the Examiner.

## **V. SUMMARY OF CLAIMED SUBJECT MATTER**

The present invention is directed to a soundproofing and thermally insulating element (page 2, lines 14-15 of the specification) which includes a panel of rigid polyurethane foam (page 2, line 15 of the specification) with greater than 90% closed cell content.(page 2, line 16 of the specification) The surface of this panel must have from 1 to 18 depressions per square centimeter. (page 2, lines 16-17 of the specification) These depressions must have a diameter of from 0.1 to 10 mm (page 2, line 17 of the specification) and a depth of from 10 to 70 mm. (page 2, line 17 of the specification) At least two types of depressions which differ in at least one dimension must be present. (page 2, line 18 of the specification)

## **VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL**

Claims 1-10 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Lee et al (U.S. Patent 5,770,635) in view of Becker et al (U.S. 2002/0179367).

## VII. ARGUMENTS

- A. One skilled in the art would not combine the teachings of Lee et al and Becker et al.

Lee et al discloses dimensionally stable rigid polyurethane foams made from specified types of materials which are useful in the automotive industry as headrests, bumpers, internal panelling and as shoe soles.

Lee et al does not teach anything with respect to sound absorption. One skilled in the art seeking an improved sound absorbing foam would not therefore consider the Lee et al disclosure to be any more pertinent to his/her problem than the thousands of other foam patents. That skilled artisan would not therefore be led by the teachings of Lee et al to an improved sound absorbing foam.

The Examiner has argued that while Lee et al does not particularly recite formation of slots or depressions in the surface of the formed articles disclosed therein, it would have been obvious for one skilled in the art to employ the surface perforation operations of Becker et al to the surfaces of Lee et al's formed articles for the purpose of improving the sound absorbing properties of the articles formed "in order to arrive at the products of applicants' claims..."

Appellant respectfully disagrees.

The dimensional stability problem addressed by Lee et al is unrelated to the problem of sound absorption addressed by Becker et al. Further, there is **no** teaching in Becker et al that perforation of rigid insulating foams of the type disclosed by Lee et al would not adversely affect the dimensional stability of that perforated rigid foam.

It is well established that the fact that disclosures can be combined does not make the combination obvious unless the art also contains something to suggest the desirability of the combination. In re Imperato, 179 USPQ 730 (CCPA 1973).

In the present case, the Lee et al reference is silent with respect to depressions on the surface of the disclosed rigid foams. Lee et al does not even mention sound absorption much less suggest that the disclosed foams should be used for such applications. Lee et al is specifically directed to improvement of

dimensional stability of low density foams for use in insulation applications. No relationship between dimensional stability, sound absorption or surface depressions is taught or suggested by Lee et al.

In fact, one skilled in the art seeking to develop insulating foams would not consider it obvious to perforate the foam surface because such perforation would open the foam cells. Such cell opening would be expected to have an adverse effect upon stability and allow the insulating gas present in those cells to escape.

The Becker et al reference is directed to foams with an integral skin. It is this integral skin, **not** the foam cells which are perforated by Becker et al.

Appellant maintains that the teachings of Becker et al with respect to perforation of the skin of the molded articles disclosed therein would not suggest that there would be any advantage to perforation of the Lee et al foams.

One skilled in the art would not therefore combine the teachings of Lee et al and Becker et al in the manner suggested by the Examiner.

- B. Neither Lee et al nor Becker et al teaches or suggests foams having two different sized depressions satisfying the criteria of Appellant's claimed invention.

Lee et al does not teach or suggest that the disclosed foams must have any surface depressions much less the number of depressions per square centimeter, size of depressions or number of types of depressions required in Appellant's claimed invention.

Becker et al discloses sound-absorbing polymer foam molded articles in which the **skin** of the molded foam is perforated. Becker et al does **not** teach or suggest depressions in the foams disclosed therein. Further, Becker et al makes it quite clear that the **foam** disclosed therein does **not** have perforations in Paragraph [0013] where it is stated:

The perforation should obviously **not penetrate** the moulded foam part itself, but simply the compacted layer of the surface. (emphasis added)

Becker et al does not teach or suggest that the compacted surface have any other type of depression than a depression caused by perforation. The teachings of

Becker et al can not therefore be construed in any manner which would suggest to one of ordinary skill in the art that there would be any advantage to using two different types of perforations (i.e., perforations of at least two different sizes) much less that use of such different types of perforations would improve sound absorption.

Appellant's claimed invention requires two different sizes of depressions (not holes) **in the foam**. The significance of the use of such different sized depressions in the numbers required by Appellant's claims is demonstrated in the examples of the invention and the comparative examples given in the specification.

Neither Lee et al nor Becker et al teaches or suggests foams having two different sizes of depressions. Nor is there any teaching in either of these references which would lead one skilled in the art to expect that use of at least two different-sized depressions would improve the sound absorbing capability of a foam such as that claimed by Appellant.

The teachings of Lee et al and Becker et al can not therefore be properly combined in any manner which would render Appellant's claimed invention obvious.

Appellant would further point out that neither Lee et al nor Becker et al teaches the number of depressions, size of depressions or the need for two different sized depressions required in Appellant's claimed invention. These references do not therefore provide the required factual basis to support a rejection under 35 U.S.C. §103.

The Examiner has argued that Appellant's claims set forth no degrees of difference between the two different types of depression required so as to distinguish over the "natural variations in sizes of perforations arising from imperfections associated with real world practice of the disclosed operations of Becker et al."

Appellant respectfully disagrees. Becker et al's perforations are made in the integral skin of the foam-not the foam itself. Appellant's claims require depressions in the rigid polyurethane foam and these depressions must differ by at least one of the depth or diameter parameters.

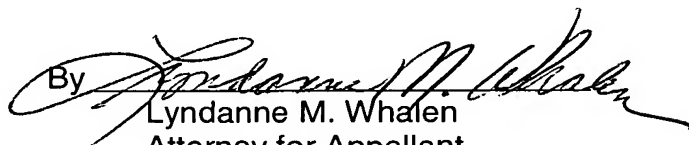
Appellant's claims do therefore clearly distinguish the depressions of the present invention from the perforations in the molded articles of Becker et al.

# **VIII. CONCLUSION**

Lee et al teaches nothing with respect to sound absorption or to the presence of depressions in the foams disclosed therein. Becker et al teaches perforation of the compact foam skin - not the foam. Neither of the cited references discloses a foam having two different sizes of depressions. Neither of the cited references suggests any advantage to using two different sizes of depressions in a closed cell rigid polyurethane foam. The teachings of Lee et al and Becker et al can not therefore be properly combined in any manner which would render Appellant's claimed invention obvious.

Appellant therefore maintains that the Examiner's rejection is in error and respectfully requests that this rejection be reversed and that Claims 1-10 be allowed.

Respectfully submitted,

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## **IX. CLAIMS APPENDIX**

1. A soundproofing and thermally insulating element comprising a panel of polyurethane rigid foam with a proportion of closed cells of more than 90%, with a surface having 1 to 18 depressions per square centimeter, the depressions having a diameter of from 0.1 to 10 mm and a depth of from 10 to 70 mm, wherein at least two types of depressions that differ in at least one dimension are present.
2. The element of Claim 1 in which depressions are present on both front and rear sides of the foam panel.
3. The element of Claim 2 in which the panel of polyurethane rigid foam is provided with an outer layer on the front or rear side.
4. The element of Claim 3 in which the outer layer is an aluminum foil or a mineral fiber fleece.
5. The element of Claim 4 in which the panel of closed-cell polyurethane rigid foam is provided with an outer layer on the front and rear sides.
6. The element of Claim 5 in which the outer layer on the front side of the foam panel is a different material than the outer layer on the rear side of the foam panel.
7. The element of Claim 1 in which the panel of polyurethane rigid foam is provided with an outer layer on its front and rear sides.
8. The element of Claim 7 in which the outer layer is an aluminum foil or mineral fiber fleece.



9. The element of Claim 8 in which the foam panel is provided with an outer layer on both its front and rear sides.
10. The element of Claim 9 in which the outer layer on the front side of the foam is a material different from that of the outer layer on the rear side of the foam.

**X. EVIDENCE APPENDIX**

**None**

**XI. RELATED PROCEEDINGS APPENDIX**

None